

REMARKS

Claims 1-19 are pending in the application. Claims 1-19 are rejected. Claims 13, 15, 17 and 18 have been amended herein. Accordingly, claims 1-19 remain active in the application. In view of the claim amendments and the following remarks, reconsideration of the application is respectfully requested.

Specification and Claim Objections

The identified informalities in claims 13 and 17, and in the abstract, have been corrected in accordance with the Examiner's suggestions. Applicant has detected and corrected several other minor technical errors in claims 15 and 18.

Claim Rejections – 35 U.S.C. § 103

Claims 1-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rao, U.S. Patent No. 6,789,118, ("Rao"). Applicant respectfully traverses this rejection, and submits that Rao fails to present a *prima facie* case of obviousness for any of the rejected claims.

The rejection asserts that Rao's cell buses move user traffic between the FMs using multicast circuitry. (page 3, paragraph 2.) The reference for this assertion, Rao column 5, lines 21-23, does not state that user traffic is multicast—it states that the cell buses move user traffic between the FMs. In a separate clause, the reference states that internal protocol and control messages are carried using multicast circuitry. Nowhere does Rao teach or suggest that these "internal protocol or control messages" are address request/address reply pairs.

The rejection also asserts that it would be obvious for Rao to multicast IP cache information from one FM to the other FMs. This step is neither taught nor suggested by Rao. Referring to Rao Figure 9, Rao does not share information between the various IP caches on the different FMs—if needed address information is not in the local IP cache, each of Rao's FMs performs an ARP table lookup. Rao fails to disclose any step of multicasting information from an IP cache or from an ARP table to multiple FMs.

Apparently the most pertinent teaching in Rao with respect to address request/address replies is another teaching identified by the Examiner, Rao column 13, lines 36-46. In this paragraph, Rao explicitly states his procedure for forwarding packets with destinations unknown to the receiving FM. The receiving FM places a management ARP (MARP) request on the front of the packet, and broadcasts the packet on the management bus (not the cell bus) to the other FMs. (column 13, lines 33-41.) An FM that has the correct forwarding

port forwards the packet, and sends a MARP response packet "back to the originating FM 10 so that its ARP table 112 may be updated with the port information." (Rao, column 13, lines 41-46, emphasis added.)

Accordingly, Applicant respectfully submits that any suggestion of multicasting an address reply to multiple ones of the processors at the same time, as recited in claim 1 of the present application, originates from impermissible hindsight gained from Applicant's application, and not from Rao. As the prior art must teach each element of a claim and suggest the combination of these elements to create a *prima facie* case of obviousness—something that Rao fails to do—claim 1 is not obvious in view of Rao.

Dependent claims 2-7 are patentable at least for the same reasons as claim 1. Furthermore, with respect to claim 3, Applicant does not dispute that Rao's line cards contain packet processing circuitry and Rao's control cards contain at least one CPU each. Rao does not, however, teach the line card receiving an address request from a control card and multicasting a corresponding address reply to multiple control card CPUs, as required by claim 3.

With respect to claim 4, Rao does not disclose that the address request is an ARP request that is output to a network and the address reply is an ARP reply received from a network. Rao's MARP request is sent to other line cards, not to a network, and the MARP reply is neither multicast nor an address resolution in an ARP sense—the MARP reply contains only a destination port within the device, not a MAC address. Likewise, with respect to claim 5, even if Rao's MARP reply were multicast, it does not contain an IP address and associated MAC address as claimed.

The rejection asserts that Rao's switch converts unicast packets to multicast packets as recited in claim 6. Applicant respectfully disagrees. The referenced sections of Rao teach that Rao has the capability to unicast or multicast packets, but fail to teach Rao readdressing a unicast packet to a multicast group.

With respect to claim 7, Applicant disagrees that Rao teaches a switch fabric as recited in that claim, "including separate egress ports for separately sending the same address reply to each one of the processors." Rao Figure 4 shows a single backplane egress port, and fails to show a fabric with separate egress ports as claimed.

Turning to method claims 8-14, these claims are patentable for reasons similar to those presented above. For instance, Rao's MARP request packets are sent to other FMs in the same chassis, not "over a network" as recited in claim 7. Rao's MARP reply packets are only returned to the requester, not "broadcast to multiple ones of the applications or

processors at the same time.” Rao cannot create a *prima facie* case of obviousness for claims 8-14, as Rao fails to teach all recited claim limitations. Dependent claims 9-14 are also patentable based on their additional limitations that are missing from Rao, as already detailed above.

Claim 15 recites multiple processors for controlling operations in a network processing device, and packet processing circuitry adapted to detect unicast control packets from a network and convert the unicast packets into multicast control packets that are relayed in parallel to the multiple processors at the same time. To establish a *prima facie* case of obviousness, then, the prior art must teach packet processing circuitry that detects unicast control packets from a network and converts these packets into multicast control packets for relay to multiple processors.

Rao’s disclosed multicast groups appear to be used for packets directed to multicast or broadcast addresses. The Examiner has identified no teaching in Rao of packet processing circuitry that detects unicast control packets from a network and converts the unicast control packets to multicast control packets.

Regarding claims 16-18, Rao does not teach the control packets comprising ARP packets. Claim 17 also recites multiple network interfaces that detect replies to ARP requests and broadcast the replies to the multiple processors—receiving internal MARP requests on a management bus does not meet the limitation of detecting ARP replies from a network. Further, as noted by the Examiner, Rao does not even show his FMs multicasting MARP replies. Claim 18 recites the processors, meaning the multiple processors, each updating a corresponding address table with an address contained in the multicast ARP reply packet. Although a single FM records the contents of a MARP reply in Rao, Rao fails to teach or suggest multiple of his FMs recording the contents.

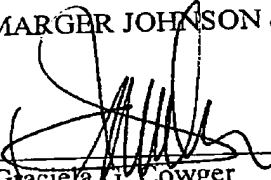
Regarding claim 19, as addressed above with respect to claim 7, Rao fails to disclose a switch fabric with the limitations recited by Applicant.

Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1-19 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

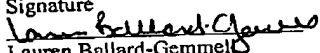
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